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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/511,115 | 06/23/2005 | Ola Karlsson | 1103326-0781 | 8848 |
| 7470 7590 02/27/2007 WHITE & CASE LLP PATENT DEPARTMENT 1155 AVENUE OF THE AMERICAS NEW YORK, NY 10036 | | | EXAMINER WU, IVES J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1724 | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
| 3 MONTHS | | 02/27/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/511,115 | Applicant(s) KARLSSON ET AL. | |
| | Examiner Ives Wu | Art Unit 1724 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/21/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-16 and 27-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-16 and 27-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

(1). Applicants' Request-for-Continued-Examination (RCEX), Amendments and Remarks filed on December 21, 2006 have been received.

Claims 1-2, 23-25 are cancelled. Total cancelled claims are 1-2, 17-26.

Claims 3,4,7 and 8 are amended

The objection of claims 5 and 6 in prior Office Action dated October 6, 2006 is removed in view of the Remarks filed on December 21, 2006.

An Office Action is presented in response to the RCEX as follows.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

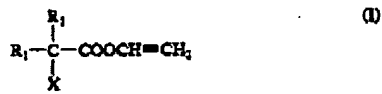
(2). **Claims 3-4, 31** are rejected under 35 U.S.C. 102(b) as being anticipated by Reinecke et al (US004056497).

Reinecke et al (US004056497) disclose a acrylic ester copolymers obtained by copolymerizing acrylic esters with α -haloalkanecarboxylic acid vinyl esters and α,β -ethylenically unsaturated carboxylic acids and optionally other unsaturated monomers in aqueous dispersion. The copolymers can be cross-linked with alkalies after the polymerization (Abstract, line 1-5).

The present patentee's invention provides a process for the preparation of aqueous copolymer dispersions capable of being cross-linked in the presence of alkalies by polymerization of a mixture of:

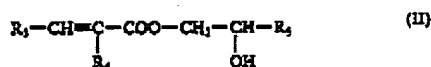
- a. 60 to 95 wt%, calculated on the monomer mixture, of at least one acrylic acid ester and/or methacrylic acid ester of a saturated aliphatic alcohol having from 1 to 20 carbon atoms,
- b. 0 to 40 wt%, calculated on the monomer mixture, of monomers the homopolymers of which have 2nd order Tg of from -40°C to +150 °C and
- c. 0.1 to 10 wt%, calculated on the monomer mixture, of an α -haloalkanecarboxylic acid vinyl esters of the formula (I)

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wherein R_1 and R_2 each represents hydrogen or an alkyl radical having from 1 to 5 carbon atoms and X is fluorine, chlorine, bromine or iodine, in aqueous dispersion in the presence of emulsifiers and/or protective colloids and of free radical initiators, which process comprises using as further reactive monomers

- d. 0.1 to 10 wt%, calculated on the monomer mixture of, α,β -ethylenically unsaturated carboxylic acids having from 3 to 8 carbon atoms or their partial ester with saturated aliphatic alcohols having from 1 to 20 carbon atoms and,
- e. 0 to 10 wt%, calculated on the monomer mixture, of monomers containing hydroxyl groups and having the formula (II)



wherein R_3 is hydrogen, a methyl group or the group $-COOR_6$, R_4 and R_5 each is hydrogen or a methyl group and R_6 is hydrogen or an alkyl group having from 1 to 12 carbon atoms.

(Col. 1, line 57 – Col. 2, line 32)

The dispersions of patentee's invention are prepared by free radical polymerization of the monomers in **aqueous dispersion using emulsifiers**, protective colloids and, optionally regulators (Col. 3, line 12-15). The polymerization temperature is within the range of from 0 °C to + 100 °C, preferably from 20° to 80°C (Col. 3, line 27-29). A foil of polyethylene terephthalate of a 2.5 cm X 20 cm dimension was provided with an adhesive layer 0.3 mm thick (application in wet state). After drying, the foil was joined under slight pressure to a carefully cleaned steel sheet for measurement of the resistance to peeling (kp/2.5 cm) (Col. 6, line 28-34). The dispersion and the film obtained from the dispersion were extracted with dioxane for determination of the degree of crosslinking (Col. 6, line 51-53).

As to the components of acrylic acid or an ester in the range 40 to 80 wt% , methacrylic acid or an ester in the range 20 to 60 wt% in **claims 3-4**, Reinecke et al disclose component (a) from 60 to 95 wt% including at least one acrylic acid ester and methacrylic acid ester of a saturated aliphatic alcohol having C_{1-20} . The range of 60 to 95 wt% would include the acrylic acid ester such as ethyl acrylate in the range from 40 to 80 wt% and methacrylic acid ester such as methyl methacrylate in the range from 20 to 60 wt% as claimed.

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As to the polymerizable surfactant in **claims 3-4 and 31**, Reinecke et al disclose the component (e) having the formula (II) which is equivalent to formula (I) as claimed, when the setting of patentee's formula (II) are $R_3 = \text{H atom}$, $R_4 = \text{H atom or methyl group}$, $R_5 = \text{H}$, and setting of applicant's formula (I) are $R_2 = \text{H atom}$, $m = 1$. Since the disclosure of the monomer by Reinecke et al is identical to the formula (I) as claimed. It is reasonable to presume that the component (e) of Reinecke et al would fulfill the utility to be a polymerizable surfactant as presently claimed in light of their chemical similarity. The burden is shifted to applicants to establish that the polymerizable surfactant of the present claims is not the same as or obvious as that set forth by Reinecke et al.

As to the emulsifying agent to be partially or fully removed after the polymerization reaction in **independent claims 3-4**, it is noticed that this is product-by-process limitation, the determination of patentability is based on product itself, process limitation is not given patentable weight. *In re Thorpe*, 777 F.2d 695,698, 277 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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(3). **Claims 5-6** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reinecke et al (US004056497).

As to the aqueous polymer dispersion, monomers, their wt percentage, formula (I) of the monomer and emulsifier being partially or fully removed after the polymerization in **claims 5 and 6**, the disclosure of Reinecke et al (US004056497) is incorporated herein by reference, the most subject matters as currently claimed have been recited in applicants' claims 3 and 4, and have been discussed therein.

As to the molecular weight of emulsifier to be less than 15kD in **claims 5 and 6**, in view of substantially identical aqueous polymer dispersion disclosed by Reinecke et al, and by applicants, it is examiner's position to believe that the emulsifier of prior art would inherently possess the molecular weight as claimed. Since USOPTO does not have facilities to perform the measurement, the burden now is shifted to applicants to prove otherwise. *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

(4). **Claims 9-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over combined teaching of Reinecke et al (US004056497) and Barry et al (US005055306) for the same rationale recited in the prior Office Action dated April 10, 2006.

(5). **Claims 15 and 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over combined teaching of Reinecke et al (US004056497) and Barry et al (US005055306), in view of Chen (US005939578A), further evidenced by Jonsson et al (US004957745) for the same rationale recited in prior Office Action dated April 10, 2006.

(6). **Claims 27-30 and 32** are rejected under 35 U.S.C. 103(a) as being unpatentable over Reinecke et al (US004056497) in view of Contrada et al (US006646046B2) and Zellstoffwerke (GB001141165) for the same rationale recited in prior Office Action dated April 10, 2006.

(7). **Claims 7, 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lalk et al (US003234039) in view of Armen et al (US003086956), evidenced by Tanaka et al (US0036717689).

As to acrylic acid or an ester in the range 40 to 80 wt% in the aqueous polymer dispersion prepared by polymerizing a mixture of monomers in **independent claims 7-8**, Lalk et al

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(US003234039) disclose an aqueous dispersion of a water-insoluble interpolymers composed about 60 to 80 wt% of at least one polymerizable acrylic ester (Col. 3, line 1-4).

As to methacrylic acid or an ester in the range 20 to 60 wt% in the aqueous polymer dispersion prepared by polymerizing a mixture of monomers in **independent claims 7-8**, Lalk et al (US003234039) disclose an aqueous dispersion of a water-insoluble interpolymers composed about 38 to 18 wt% of at least one polymerizable alkyl methacrylate (Col. 3, line 7-14).

As to a polymerizable surfactant in range 0.01 to 9 wt% in **independent claim 7**, formula of monomer in independent claim 8, Lalk et al disclose other resinous materials in dispersed form may be blended (Col. 3, line 19-22). Lalk et al **do not teach** the monomer of formula (I) as claimed.

However, Armen et al (US003086956) **teach** various polymers of certain acrylate and methacrylate monoesters (Title) in the structure: $\text{CH}_2=\text{CZCO}(\text{OC}_2\text{H}_4)_n(\text{OC}_3\text{H}_6)_m\text{X}$; m: 0 – 10; n: 5 – 100; Z: hydrogen or methyl; X: alkoxy radical.

The advantages of unsaturated monomers of Armen et al is to have great benefit as dye-receptive and/or antistatic and/or stabilizing additaments for certain hydrophobic synthetic textile fibers and the like (Col.50-53). Lso evidenced by Tanaka et al (US003717689), that this monomer provides antistatic properties in the resultant copolymer (Col. 2, line 43-45).

Therefore, it would have been obvious at time of the invention to include the unsaturated monomers of Armen et al in the aqueous monomer mixture of Lalk et al in order to obtain the above-mentioned advantage.

As to range of 0.01 to 9.0 wt% **independent claim 7**, Armen et al disclose minor proportion of polymeric products in the polymer blend (Col. 3, line 42-44). In absence of showing the criticality of records, the optimized range of 0.01 to 9.0 wt% of monomer used in the mixture in a known process render *prima facie obviousness* within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

As to a surfactant in **independent claim 7**, the disclosure of Armen et al meets the requirements of instant claim in view of identical structure, it would be reasonable to presume that this monomer would fulfill the utility of surfactant as well in light of identical chemical. The burden now is shifted to applicants to prove that the polermizable surfactant as presently claimed is not the same or obvious as set forth by prior art reference.

As to the monomer mixtures to be polymerized in water **in independent claims 7 and 8**, Lalk et al disclose the aqueous emulsion of a mixture of defined polymerizable monomers in the process of polymerization (Col. 4, line 29-32).

Response to Arguments

Applicant's arguments with respect to claims 1-16, 23-25 and 27-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu
Art Unit: 1724
Date: February 23, 2007

DUANE SMITH
PRIMARY EXAMINER

D - [Signature]
2-26-07